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## Incidence and management of laryngeal squamous cell carcinoma in the Nordic countries

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status prediction of the three classifiers are shown in Table 1

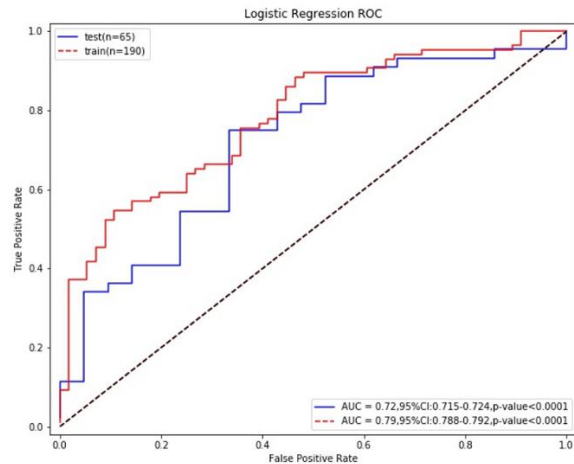


Figure 1: The receiver operator curve for HPV status classification using logistic regression.

Table 1: Classification of HPV status using three approaches.

	100 times 5-fold CV mean AUC on training set	1000 times bootstrapped AUC on test set
Logistic Regression	0.79, 95% CI: 0.78 - 0.79, p-value < 0.0001 Wilcoxon test	0.72, 95% CI: 0.71 - 0.72, p-value < 0.0001 Wilcoxon test
Linear SVM	0.76, 95% CI: 0.75 - 0.77, p-value < 0.0001 Wilcoxon test	0.70, 95% CI: 0.70 - 0.71, p-value < 0.0001 Wilcoxon test
Random Forest	0.68, 95% CI: 0.67 - 0.69, p-value < 0.0001 Wilcoxon test	0.60, 95% CI: 0.59 - 0.61, p-value < 0.0001 Wilcoxon test

CV: cross validation; CI: confidence interval

## Conclusion

It is possible to classify HPV status for HNSCC patients using CT image-derived features, which could lead to better precision treatment decision. However, the results should be further validated on larger and external datasets.

## PD-032 Incidence and management of laryngeal squamous cell carcinoma in the Nordic countries

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## Purpose or Objective

The Nordic countries are characterized by a uniform and public health care system for all patients. In principle all head and neck cancer patients are treated according to national guidelines in this area with a population of 26M. Laryngeal cancer is characterized by a difference in

incidence rate (due to different smoking habits in these countries) and by the variation in the use of radiotherapy or surgery as the primary treatment. The Scandinavian Society for Head and Neck Oncology performed a survey of laryngeal squamous cell carcinoma (LSCC) in the Nordic countries with the aim to study the population-based epidemiology and management of LSCC.

## Material and Methods

All patients identified in the Nordic cancer registries who were diagnosed with LSCC (ICD 32) and treated during the years 2011 and 2012 within these countries were included. All patients were followed for at least 5 years or until death.

## Results

A total of 1265 patients were identified with 185 from Finland (population 5,5M); Sweden 371 (9.7M); Denmark 467 (5.6M); Norway 233 (5.1M) and Iceland 9 (0.3M). The localization of the tumors was as follows: glottic 66%; supraglottic 29%; and subglottic or not identifiable 5%. The proportion of glottic LSCC ranged between 61-70% with Denmark having the largest proportion (x%) of non-glottic LSCC patients. Most of the tumors were of early T class (T1 or T2; 72%) and the proportion of these tumors ranged from 62% to 75% with Finland having the lowest proportion (x%). Nodal disease was rare in patients with glottic tumors but was observed in half of those with non-glottic cancers. Distant metastases were found in less than 5% of the patients. Treatment with curative intent was administered to 93-95% of the patients. In Denmark almost all patients received accelerated radiotherapy with chemoradiotherapy and hypoxic modification with nimorazole for advanced cases, and primary surgery being reserved only for T1a glottic cancer in a clinical trial. In Finland and Sweden surgery was used as a primary treatment modality more widely, especially in locally advanced (T3-4) LSCC. The 5-year overall survival (OS) for glottic LSCC patients ranged between 63% and 68% and for non-glottic LSCC patients between 39% and 44%. The respective 5-year disease-specific survival (DSS) figures for glottic and non-glottic LSCC were available for Denmark (83% and 68%) and Finland (88% and 55%). The OS was typically 20% inferior to DSS mainly due to a high level of (smoking-related) comorbidity.

## Conclusion

This comprehensive population-based analysis demonstrates, that despite the differences in treatment approaches between the national protocols in the Nordic countries, treatment outcomes for LSCC are rather similar. More importantly, it remains evident that a better primary treatment approach is needed for the advanced-stage disease. The overall mortality was strongly influenced by smoking-related comorbidity.

## Symposium: Symposium 3: New techniques in surgery

### SP-033 Bio-endoscopy

G. Peretti

Italy

Abstract not received

### SP-034 3Dimension Reconstruction in the Head and Neck

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